



217/782-6760

Refer to: L2010355004 -- Winnebago County
Beloit Corporation -- Rockton
Superfund/Technical Reports

BY FACSIMILE

November 18, 1991

EPA Region 5 Records Ctr.



255423

Mr. Kevin J. Domack, Project Manager
Warzyn Engineering, Inc.
One Science Court
Post Office Box 5385
Madison, Wisconsin 53705

Dear Kevin:

The Illinois Environmental Protection Agency (IEPA) has had an opportunity to review your positions regarding our concerns with the workplan. The points that you had raised during our November 13, 1991 meeting in Chicago have been brought to our attention at other Superfund Sites in Illinois.

To summarize what we had agreed to negotiate at the meeting, IEPA had agreed to consider your proposal to complete the remedial investigation (RI) in phases. We had also agreed to consider the following activities in Phase 1 of the RI:

1. A soil gas survey followed by soil borings and monitoring well installations (as noted in your proposed workplan);
2. Residential well sampling (as noted in your workplan); and
3. Geophysical work.

As far as implementing a soil gas survey in Phase 1, IEPA concedes that this technique can be a valuable tool in delineating possible source areas. We do believe, however, that this technique is a two-dimensional approach in source characterization, and because of many factors (i.e instrumentation, instrument operator training, physical soil characteristics, background temperature, etc...), if the method is approved, we must reserve the right to review soil gas data to determine its usability before agreeing to a specific soil boring program. In the event that IEPA would determine that the data is not usable, Beloit will be required to employ the soil boring approach as outlined in my October 21 comment letter on the workplan. Again, to state our position on your proposed soil boring program, we believe that you have prematurely assumed that the quantities of VOCs that have been spilled at this site are minimal. In the absence of any documentation whatsoever relating to usage or spillage of VOCs effecting the site, we believe that we are justified in proposing a more conservative approach (i.e. more deep monitoring wells and deep soil borings to locate large



quantities of VOCs perched atop confining layers) in characterizing disposal areas. In the event that IEPA is convinced that your soil gas techniques will indeed fully characterize all source areas at this site and that the correct interpretation of the data indicates that only minimal amounts of VOCs were disposed of, IEPA will be more amenable to approving a soil boring program that will consist of more shallower borings and monitoring wells to delineate a dissolved plume.

At the end of our meeting we had agreed on the need for two separate nests of upgradient monitoring wells. Beloit had expressed its concerns over "IEPA's insistence" on the use of stainless steel well casing at sites with VOC contamination. In reviewing your request that the wells be composed of "hybrid" materials, such as PVC/stainless steel, IEPA will agree to this provided that the PVC casing be present in the unsaturated zone only. This is contrary to IEPA Technical Policy #5, which was handed to you at the meeting, but is consistent with new IEPA regulations being promulgated that outline the use of well casing materials. We concede that your proposed casing material will not interfere with groundwater samples so long as the PVC casing does not in any way contact the groundwater being sampled. These new regulations have been recently finalized and are in effect. A copy of the new ruling will be made available to you as soon as I get my copy.

With respect to your very strong objections regarding sampling at more than six residences in the Blackhawk Acres Subdivision, IEPA is in no position to negotiate the need for sampling all private wells at the site. Our position on this is that four separate sampling events will be necessary and that the first two events will sample for full IEPA TCL parameters (see attached). IEPA will negotiate what parameters are sampled for (subsequent to the second round), but not the number of homes sampled. The Illinois Department of Public Health (IDPH) is in agreement with IEPA on this matter and our justifications for sampling this number of homes are as follows:

1. A risk assessment which is supposed to categorize risks at the site cannot be prepared with data on only six homes. A risk assessment that has been improperly prepared will cause serious problems in the feasibility study.
2. The Preliminary Health Assessment, which was prepared by IDPH indicates that residents living at the site are at risk, that continued sampling needs to be done at existing wells in the area and that additional private wells that might be contaminated need to be identified.
3. See also Comment #15 of my comment letter.

As far as the usability of residential well data is concerned, it is not known if existing data can be used in an RI. The objective of previous work performed by IEPA at the site was to investigate the extent of contamination and to provide data for the HRS package




- it was never intended to be used as data for an RI. This existing, along with sampling carried out by IDPH shows that only VOCs were monitored for and the methodologies that were used during these sampling rounds may not satisfy the current model QAPP. In addition, these sampling initiatives did not cover all residences over the entire site during any one sampling event. Our justification on the need for the sampling of compounds other than VOCs (as noted above) is that other compounds were never sampled for. The presence of an oil reclaimer and a septic tank cleaning business certainly indicates that other contaminants affecting private wells could be present at the site.

In addition to the need for further residential well sampling, Beloit Corporation will be responsible for providing bottled water to affected residences at the site. This will need to be discussed at the upcoming meeting.

Referring to any geophysical work that could be performed at this site, Beloit must evaluate all viable options. See also Comment #14 of my comment letter.

If you have any questions or concerns about these positions, please do not hesitate to contact me. The workplan that will be approved of by this agency will incorporate all comments made in my October 21 letter as well as this letter. Because of the difficulties encountered in arranging dates for these meetings, I have decided to grant an extension for the submittal of your modified workplan. The new date will be December 11, 1991. I assume the next meeting will be at Coffield Ungaretti & Harris at 10:00AM on November 26.

Sincerely,



Paul E. Takacs, Project Manager
Federal Sites Management Unit
Remedial Projects Management Section
Division of Land Pollution Control

Attachment

cc: Terry Ayers (w/o attachment)
Paul Jagiello (w/o attachment)
Howard Chinn, IAGO
Joe Annzio, IAGO
Ken McCann, IDPH
Wayde Hartwick, USEPA
Gail MacMillan, Ebasco
Michael Radcliffe, Harnischfeger
Division File (w/o attachment)

USERS MANUAL
FOR THE
IEPA CONTRACT
LAB PROGRAM

Division of Land Pollution Control
Illinois Environmental Protection Agency

May, 1989

USERS GUIDE

The IEPA Contract Laboratory program was developed for the Division of Land Pollution Control by the IEPA Laboratory Services Division. The Contract Lab Program presently utilizes three private analytical laboratories and a central bottle distribution system. The bottle distribution center is operated by Gulf Coast Laboratories in Springfield near our Regional Office. The bottle distribution center provides standardized sample bottles which are used to send samples to all contract labs.

The IEPA is not the sole customer of any of our contract laboratories. They fit our work in with that of their other clients. They like to keep work flowing at a steady pace without slow downs due to no work or great rushes due to heavy work load. Therefore, advance planning by lab users is required.

All scheduling is done by requesting whether a lab can take a specific number of samples, for specific analyses, to arrive on a specific date. The labs can and do say "no" sometimes because they have learned that they cannot accept all the work and meet their scheduled turnaround times. To avoid problems for everyone, we encourage them to accept only what they know they can do within the 30-day time period.

All work should be scheduled as far in advance as possible. One week in advance should be the minimum except on rare occasions. Preparation of bottles and paper work for any project takes time for our bottle shop and they also like to keep their work flowing smoothly.

Almost all of our work is done on a 30-day turnaround time. Everyone would like to have their work done on a 7-day basis, but that is not possible and it is very expensive. If you think your work requires a 7-day turnaround you must get prior approval of your unit manager. Please note - One sample for the target compound list (TCL) can occupy all the staff and equipment of a lab for a whole day. They cannot do large numbers of complex samples in 7 days even if they want to put all other work aside.

The Contract Lab program is used primarily by the State Site Management Unit, the Leaking Underground Storage Tank Unit and the Immediate Removal Unit. Others such as the Field Operations Section, Federal Site Management Unit, Office of Emergency Management and Department of Law Enforcement will use it on a limited basis. If you have contractors sampling for you, please be sure that they are familiar with contract Lab procedures.

To maintain a smooth operating program with quick turn around time, all sample scheduling and ordering of sample bottles is coordinated through one person who is located in the Land Division. Bottles will be ordered by the Contract Lab Coordinator (CLC) at the same time samples are scheduled with an analytical laboratory. The CLC is Sue Doubet. If she is out, Ron Turpin of the Division of Laboratory Services can do scheduling. If neither is available contract one of the Unit Managers.

TABLE OF CONTENTS

	<u>Page</u>
Users Guide	1-3
Laboratories Under Contract	4-7
Bottle Distribution Center	8
Sampling Plan	9-10
Request for Bottles/Analysis	11
Monitor Point/Sample Point Number	12
Chain of Custody/Parameter Request Form	13
Contract Lab Price List	14-17
Frequently Requested Analyses	18
Target Compound List	19-23
Bottle List	24
Preservative Color Code	25
Sampling Check List (GW)	26
Using the Data	27-33

To utilize the Contract Lab and Bottle Distribution Program:

1. Develop a site specific sampling plan and obtain approval of the Unit Manager.
2. Complete the IEPA-CLP Request for Bottles/Analyses form and take it to the CLC. Regional personnel can call and the CLC will fill out the form for them. The form will be used to:
 - A. Schedule analytical work at a contract lab.
 - B. Order bottles from the distribution center.
3. The requested sample bottles will be received from the distribution center in sealed coolers. The person receiving the cooler(s) should be the person in charge of the sampling. The cooler should not be opened until time of sampling. This person will find partially completed IEPA-CLP Chain of Custody/Parameter Request forms along with the sample bottles in the cooler. There will be one form for each sample scheduled. Much of the pertinent data will already be written on the form by the bottle distribution center, based on information supplied when the bottles were ordered.

When the person in charge of the sampling opens the cooler he must complete and sign the first portion of the Chain of Custody Chronicle. After sample collection has been completed, the person in charge of the sampling must complete and sign the second portion of the Chain of Custody Chronicle making sure that all necessary information has been included and placed in the cooler. He must then make sure that the cooler is properly sealed.

You will find extra bottles included with every sample set. Unused bottles and coolers must be returned to the bottle distribution center or the analytical lab. Once samples have been scheduled to a laboratory, the sampler should not add extra samples or request extra analyses of the Laboratory without prior approval.

4. The date and time the samples will arrive at the laboratory are essential information. It is important to remember that when a lab agrees to accept samples they reserve time and equipment to process them. The person responsible for delivering samples to the lab must notify the lab if the samples will not be delivered at the scheduled time.

In keeping with our system in which all contacts with the lab are made by the CLC, any change in delivery date should be relayed through that person. If a delay occurs in the field, the sampler should call both the CLC and the laboratory that is waiting for the samples.

After sampling, the sampler must contact the lab to say that the scheduled samples have been taken and explain the method of delivery and expected arrival time at the lab. This is an important step and must be done in every case. A list of laboratories with phone numbers and addresses is included on page 4.

5. Strict Chain of Custody includes documenting that the right samples have gotten to the right lab with the right sample sheets. Therefore, your job is not over when you drop off the samples at the lab. It is very important that when you deliver samples to the Lab, the samples be removed from the cooler, matched to the Chain of Custody/Parameter Request Form and examined for breakage and missing bottles before the form is signed by the receiving Lab. Do not leave the lab or have the form signed while your samples are still in the cooler. The labs should not sign for incomplete or damaged samples. If a bottle is broken or missing, it must be noted at the time the samples are received at the lab.
6. The Chain of Custody/Parameter Request Form is a three part form. The original is to stay with the samples and to be returned to the Agency with the analytical results package. The analytical laboratory may retain one copy for their records and the person delivering the samples to the lab may retain a copy.

CONTRACT LABORATORIES

The Laboratories Under
Contract for FY90 are

Contact Person

Normal
Business Hours

ARDL, Inc.
1801 Forest Avenue
Mt. Vernon, Illinois 62864
618/244-3235

Dan Gillespie or
Rick Pruhs

8-5

Gulf Coast Laboratories, Inc.
2417 Bond Street
University Park, Illinois 60466
312/534-5200

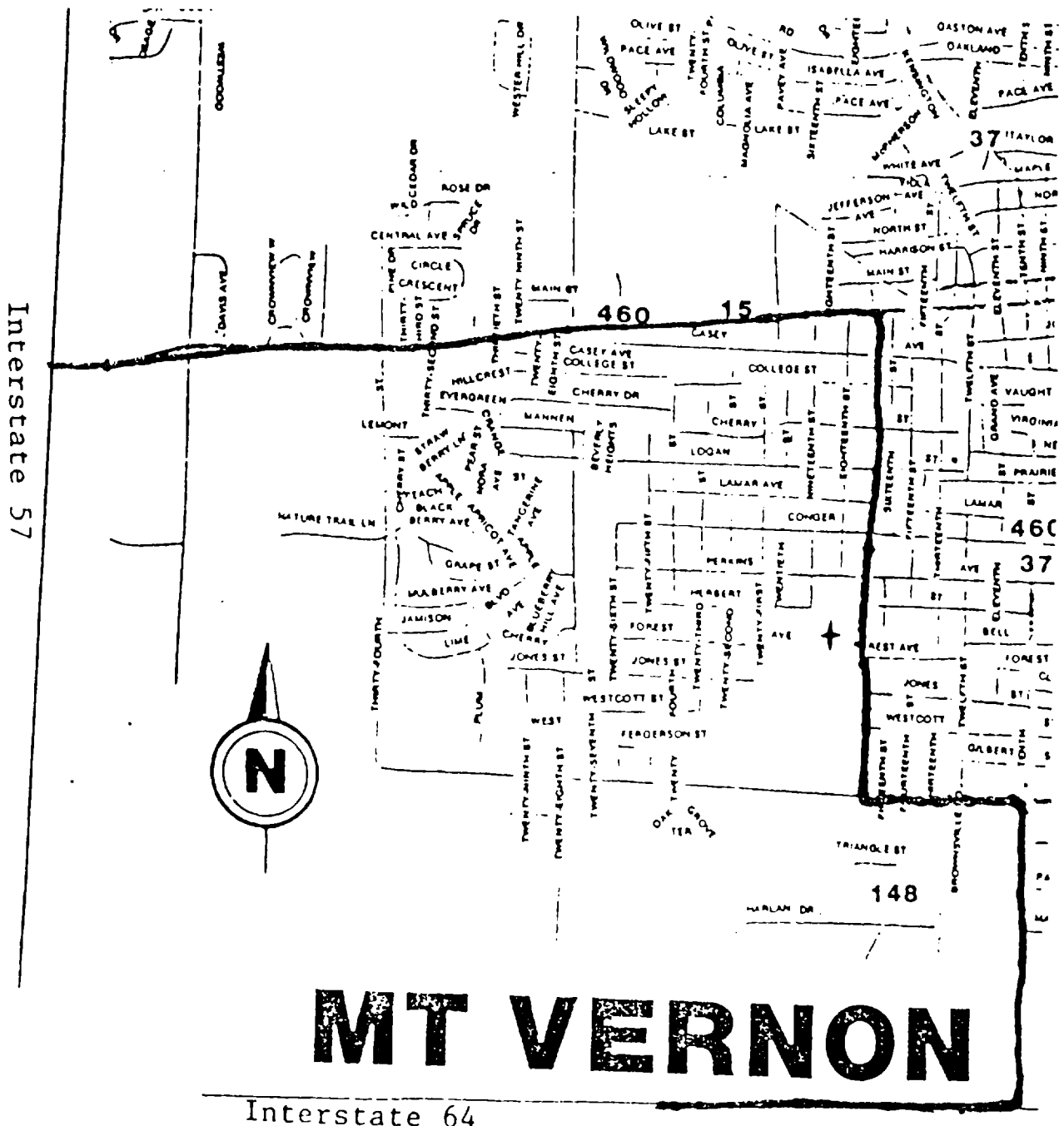
Bill Preston or
John Boudreau

7:30-5:30

Randolph & Associates, Inc.
8901 North Industrial Road
Peoria, Illinois 61615
309/692-4422

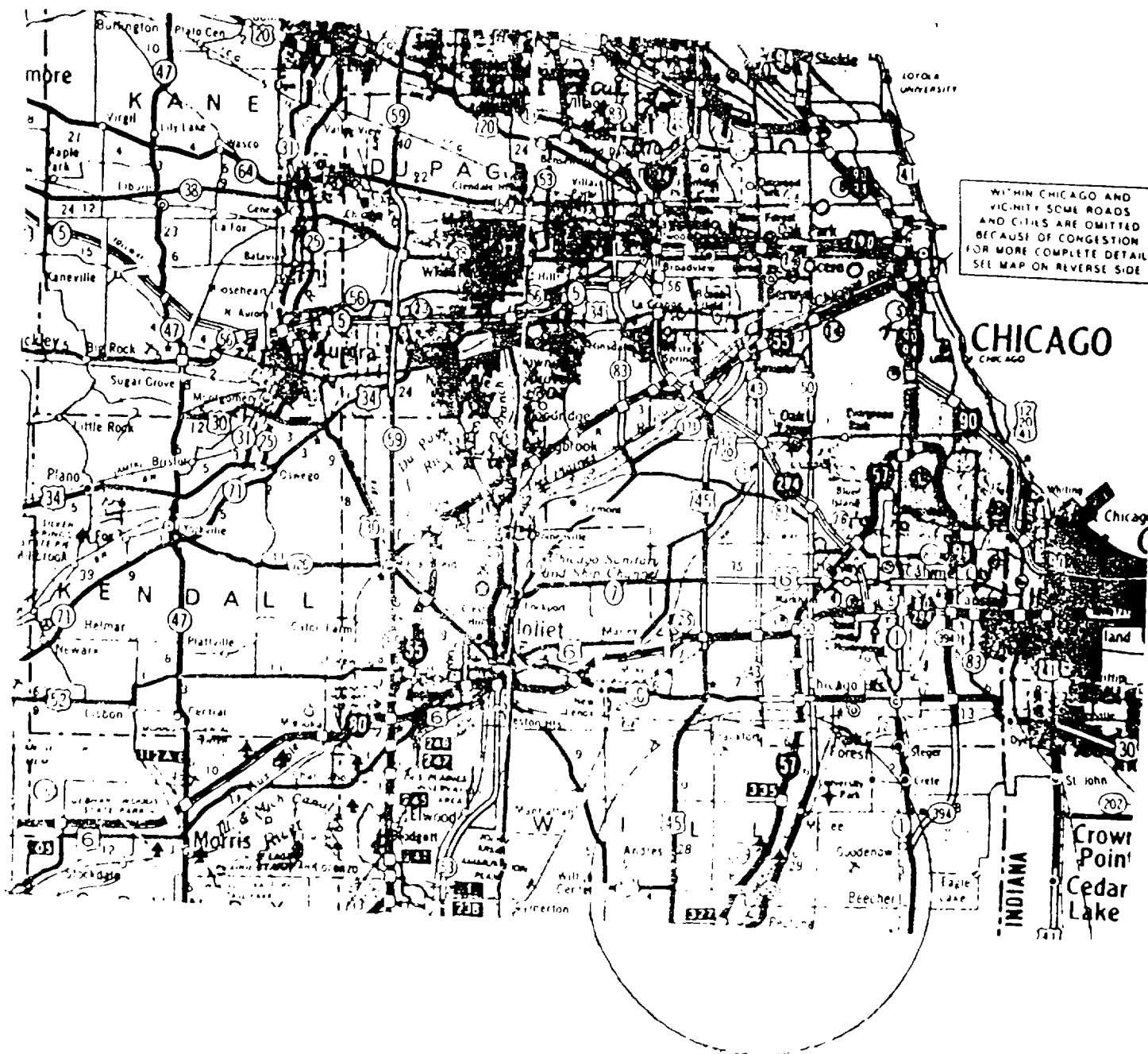
Mel Rozeboom or
Barbara Ray-Hash

8-5



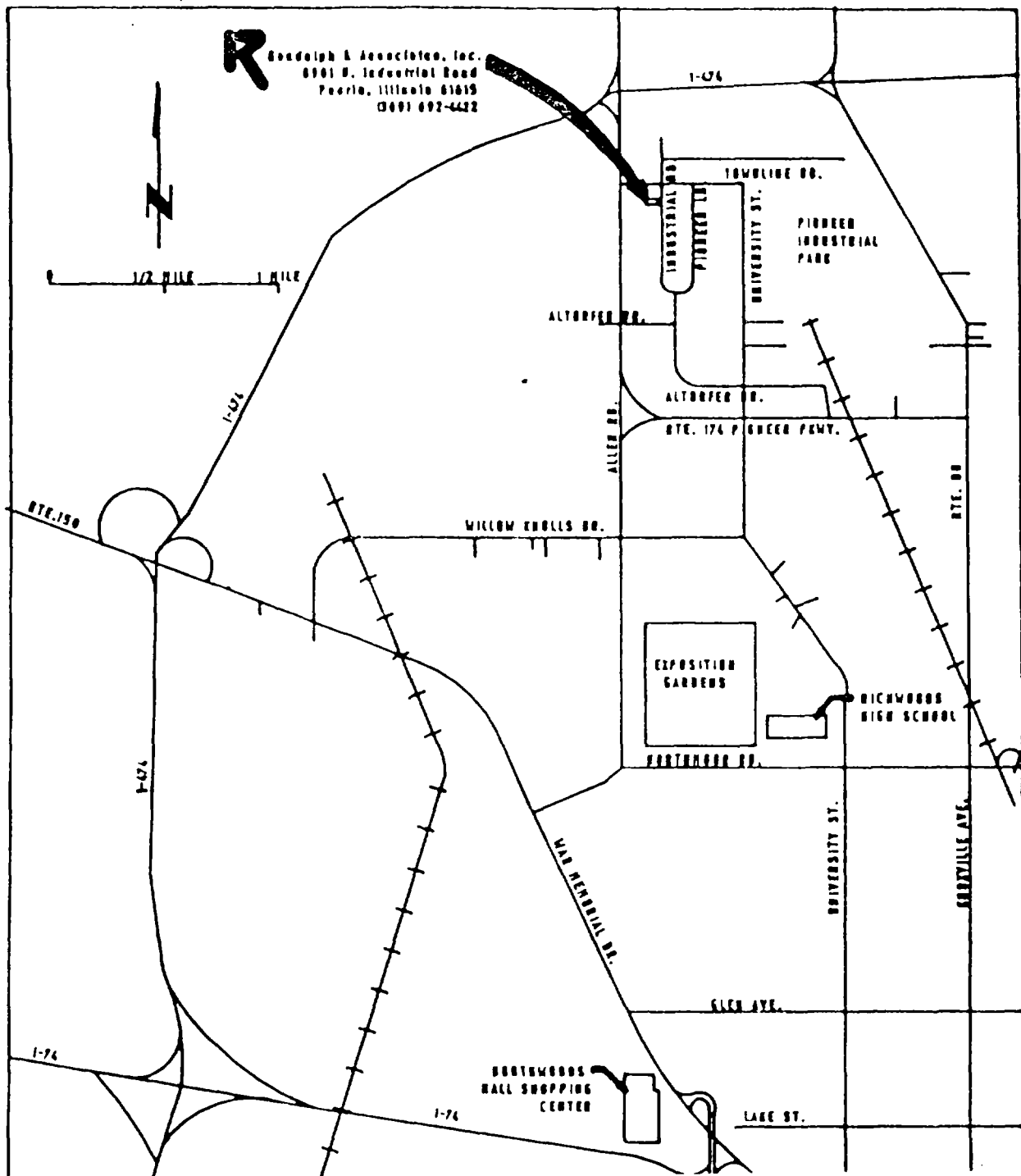
ARLD Labs
1801 Forest Avenue
Mt. Vernon, IL 62864
(618)244-3235

157 to Rt 15 turn east, proceed through city until you see a pedestrian overpass. Go 2 more blocks and turn south (right) on 17th St., proceed about 10 blocks to Forest. Lab on corner.



Gulf Coast Lab
 2417 Bond Street
 University Park, IL 60461
 (312)534-5200

157 to Exit 335 (Manhattan/Monee Road), east to first stop (Central Ave.) north (left) to first stop (Bond St.) turn east (right), go 1/2 mile.

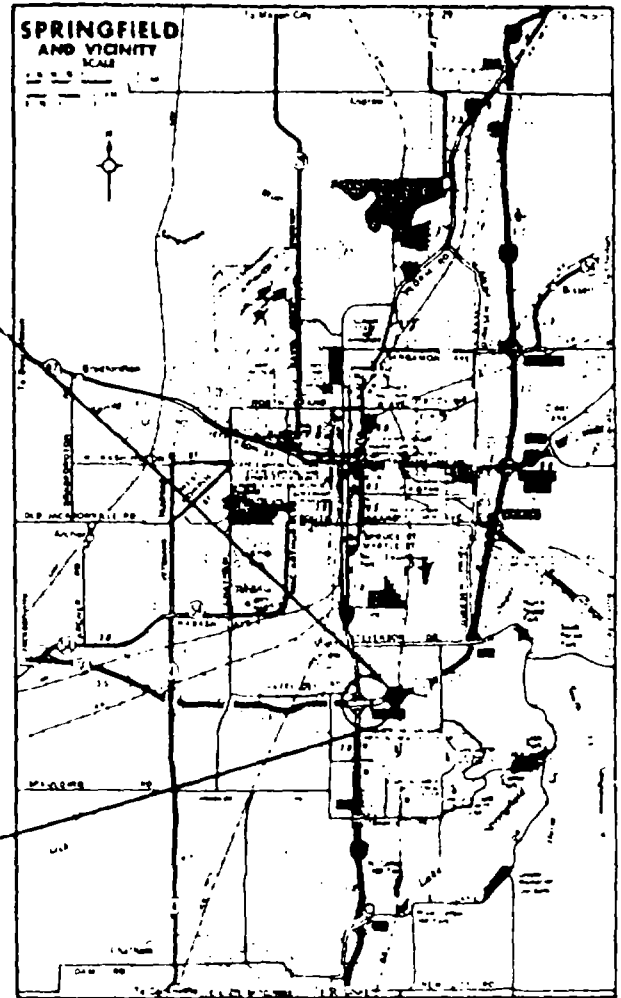
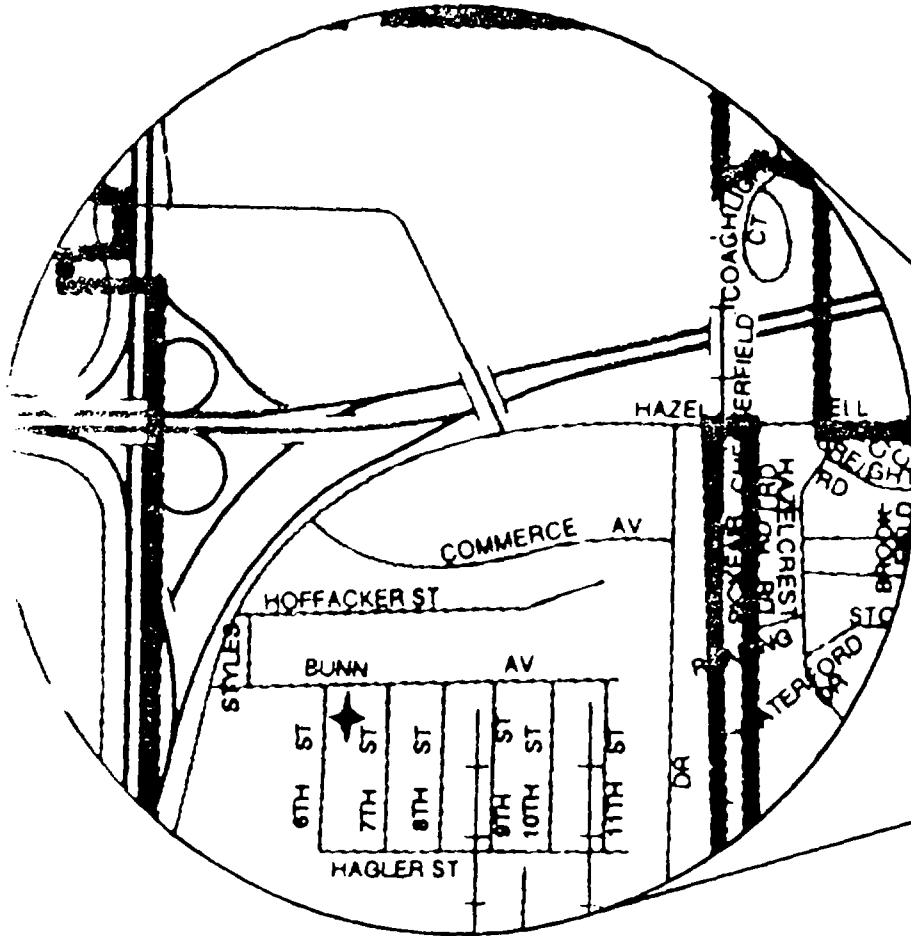


Randolph & Associates, Inc.
8901 N. Industrial Rd.
Peoria, Illinois 61615
(309)692-4422

I-474 (Rt 6) to Allen Rd., turn south, go one block to Townline turn left (east). The first street is Industrial, turn right.

IEPA BOTTLE DISTRIBUTION CENTER

The bottle distribution center is located near the Division warehouse. The address is 1215 Bunn Avenue; Bldg 1-A; Springfield, Illinois 62703. The phone number is (217)529-0539. Business hours are 8-5 on weekdays, the operator is Bill Ward.



Take exit 92 at the intersection of I55, US 36 and I72. Turn east at stoplight. The Heritage House Restaurant will be on the west side of highway. Go to stop sign, turn right. Go to first paved street. Turn left (east) on Bunn through gate to first warehouse on right, first walk through doors on west side of building.

SAMPLING PLAN

Site _____

Person Requesting Analysis _____

Objective: _____

SAMPLING:

A) Groundwater - Number of Samples _____

Location of Samples* _____

Rationale for Sampling, Analysis and Turn Around Time Requested _____

B) Surface Water - Number of Samples _____

Location of Samples* _____

Rationale for Sampling, Analysis and Turn Around Time Requested _____

B) Air - Number of Samples _____

Location of Samples* _____

Rationale for Sampling, Analysis and Turn Around Time Requested _____

D) Soil/Sediment - Number of Samples _____

Location of Samples* _____

Rationale for Sampling, Analysis and Turn Around Time Requested _____

E) Waste - Number of Samples _____

Location of Samples* _____

Rationale for Sampling, Analysis and Turn Around Time Requested _____

*Attach Map if Necessary

Approval for Analyses in Contract Lab: _____
(Unit Manager Signature)

TOTAL NUMBER OF SAMPLES _____

LOCATION FOR BOTTLE DELIVERY _____

DATE SAMPLES WILL BE DELIVERED TO LAB _____

Facility Name: _____ Project Manager: _____

Site Inventory #: _____ Type of Project: _____

Region: _____ Est. Analytical Cost: _____

County: _____ Site Billing Code: _____

# of Samples	Matrix	Analyses Requested
--------------	--------	--------------------

Cooler Configuration Request: _____

Blue Ice Packaging Request: _____

Date Requested by: _____ Pick-up or Ship (Circle one)

Ship to
Address:

Lab Performing Analyses: _____

Requested Turnaround Time: _____

(7-day Requires signature of U.M.)

Sample Arrival Date at Lab: _____

Sample Delivery Method: _____

MONITOR POINT/SAMPLE POINT NUMBER

The monitor point number identifies a specific monitor point where samples are taken. The first digit must only be an alpha character. The second, third and fourth digits will be numeric. The following guidelines should assist in assigning monitor point numbers for the majority of situations.

- a. The first digit identifies the type of the monitoring point. The following key provides the appropriate first digit of the monitor point number.

<u>G Groundwater</u>	<u>L Leachate</u>	<u>S Surface Water</u>	<u>X Special (Soil or Waste)</u>
1 Monitor Well	1 Flow or Seep	1 Upstream	1 Soil
2 Private Well	2 Pond	2 Mid-Site	2 Waste
3 Spring	3 Collection System (riser, sump, etc.)	3 Downstream	3 Other
4 Lysimeter		4 Run-off	
5 Public Water Supply		5 Impounded	
6 Recovery Well		6 Run-on	
7 Injection Well			
8 Interceptor Trench			

- b. The second, third and fourth digits should designate the sample number. In the case of monitoring wells use the well number. In most other sampling the samples can be numbered sequentially.
- c. It is very helpful when using the data to have a list of all samples with each designated by number and briefly described. This list, together with a map of sample locations, will be useful to reviewers who were not present during sampling.

IEPA - CLP
CHAIN OF CUSTODY

Seal #: _____

Date Sealed: _____ By: _____

Facility

Name : _____
Region: _____
County: _____

Site Inventory # : _____
Site Billing Code: _____
Project Manager : _____

LABORATORY #	SAMPLE I.D.	SAMPLE DATE	SAMPLE TIME
--------------	-------------	-------------	-------------

Sample Appearance : _____

Collector Comments : _____

Sampler Signature : _____ Division/Company _____

CONTAINER				ANALYSIS		FILTERING	
No.	Code	Size	Pres			(Y/N)	Date : Time

CHAIN OF CUSTODY CHRONICLE

I certify that I received the sample shipping container with the shipping container sealed and intact.

Opened by (print): _____ Signature: _____

Date: _____ Time: _____ Seal #: _____ Intact?: Y / N

I certify that the sample listed above was collected and placed in bottles in my presence, that each bottle was placed intact in the sample shipping container and that I sealed the sample shipping container at the date and time listed below.

Sealed by (print): _____ Signature: _____

Date: _____ Time: _____ Seal #: _____

Courier - sample pickup: _____

Courier - sample delivery: _____

I certify that I received the sample shipping container from the courier listed above with the shipping container and seal intact and that each bottle in the shipping container was intact. After recording the sample in the official record book, the sample will be in the custody of competent laboratory personnel at all times or locked in a secured area.

Opened by (print): _____ Signature: _____

Date: _____ Time: _____ Seal #: _____ Intact?: Y / N

Lab Name: _____ Comments: _____

CONTRACT PRICE LIST

Testimony at a Public Hearing or Court Case

The following rates will apply for testimony, provided by the contractor, at a Public Hearing or Court Case:

Principal.....	\$90.00/hr
Laboratory Manager.....	\$70.00/hr
Mass Spectroscopist.....	\$55.00/hr
Chemist.....	\$45.00/hr

Laboratory Cost Information

We have different prices for each laboratory and prices vary at the same lab between state and federal projects. We have two price lists, one for state money and another for federal money. SRAPL and Immediate Removal are state funded and PA/SI, LUST and NPL are federally funded.

CONTRACT LABORATORIES PRICE LIST
FEDERAL AND STATE
3-May-89

Metals

	Emergency Response						7 Work Days						30 Calendar Days					
	Federal			State			Federal			State			Federal			State		
	GC*	Ran*	ARDL*	GC	Ran	ARDL	GC	Ran	ARDL	GC	Ran	ARDL	GC	Ran	ARDL	GC	Ran	ARDL

Digestions

for AA or

ICP per each

Filtration

38	50	22	22	50	22	29	30	18	18	30	18	12	10	10	18	10	18
19	50	15	15	50	15	14	30	20	12	30	12	8.5	10	7	7	10	7

	Emergency Response						7 Work Days						30 Calendar Days					
	Federal			State			Federal			State			Federal			State		
	GC	Ran	ARDL	GC	Ran	ARDL	GC	Ran	ARDL	GC	Ran	ARDL	GC	Ran	ARDL	GC	Ran	ARDL

Al	23	25	15	15	25	15	17	15	12	12	15	12	8.5	5	5	5	5	5
Sb	47.5	25	15	15	25	15	35	15	12	12	15	12	8.5	5	5	5	5	5
As	47.5	75	30	30	75	30	35	45	24	24	45	24	18	15	11	11	15	11
Ba	23	25	15	15	25	15	17	15	12	12	15	12	8.5	5	5	5	5	5
Be	23	25	15	15	25	15	17	15	12	12	15	12	8.5	5	5	5	5	5
Cd	23	25	15	15	25	15	17	15	12	12	15	12	8.5	5	5	5	5	5
Ca	23	25	15	15	25	15	17	15	12	12	15	12	8.5	5	5	5	5	5
Cr	23	25	15	15	25	15	17	15	12	12	15	12	8.5	5	5	5	5	5
Co	23	25	15	15	25	15	17	15	12	12	15	12	8.5	5	5	5	5	5
Cu	23	25	15	15	25	15	17	15	12	12	15	12	8.5	5	5	5	5	5
Fe	23	25	15	15	25	15	17	15	12	12	15	12	8.5	5	5	5	5	5
Pb	47.5	25	15	15	25	15	35	15	12	12	15	12	18.5	5	5	5	5	5
Mg	23	25	15	15	25	15	17	15	12	12	15	12	8.5	5	5	5	5	5
Mn	23	25	15	15	25	15	17	15	12	12	15	12	8.5	5	5	5	5	5
Hg	57	75	30	30	75	30	43	45	24	24	45	24	18	15	13	13	15	13
Ni	23	25	15	15	25	15	17	15	12	12	15	12	8.5	5	5	5	5	5
K	23	25	15	15	25	15	17	15	12	12	15	12	8.5	5	5	5	5	5
Se	47.5	75	30	30	75	30	35	45	24	24	45	24	18	15	11	11	15	11
Ag	23	25	15	15	25	15	17	15	12	12	15	12	8.5	5	5	5	5	5
Na	23	25	15	15	25	15	17	15	12	12	15	12	8.5	5	5	5	5	5
Tl	47.5	25	15	15	25	15	35	15	12	12	15	12	8.5	5	5	5	5	5
V	23	25	15	15	25	15	17	15	12	12	15	12	8.5	5	5	5	5	5
Zn	23	25	15	15	25	15	17	15	12	12	15	12	8.5	5	5	5	5	5

All 23 met.	685.5	725	390	390	725	390	507	435	312	312	435	312	233.5	145	135	135	145	135
-------------	-------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-------	-----	-----	-----	-----	-----

Other Inorganic Parameters

	Emergency Response						7 Work Days						30 Calendar Days					
	GC	Federal Ran	ARDL	GC	State Ran	ARDL	GC	Federal Ran	ARDL	GC	State Ran	ARDL	GC	Federal Ran	ARDL	GC	State Ran	ARDL
Sulfide	47.5	100	30	30	100	30	35	60	20	20	60	0	12.5	20	10	10	20	10
Cyanide	66.5	100	40	40	100	40	50	60	30	30	60	30	16	20	13	13	20	13
Phenols	66.5	100	40	40	100	40	50	60	30	30	60	30	16	15	8	8	15	8
Nitrogen-Amm	38	100	30	30	100	30	28.5	60	24	24	60	24	14	15	12	12	15	12
TKN	57	150	40	40	150	40	43	90	30	30	90	30	16	20	12	12	20	12
Nitrogen-Nit	38	100	24	24	100	24	28.5	60	18	18	60	18	9.5	10	8	8	10	8
Boron	28.5	100	27	27	100	27	21	60	22	22	60	22	9.5	5	8	8	5	8
pH	15	25	10	10	25	10	11.5	15	7.5	7.5	50	7.5	3	5	3	3	5	3
Sulfate	28.5	50	30	30	50	30	21	30	20	20	30	20	12.5	5	10	10	5	10
Chloride	23	25	15	15	25	15	17	15	10	10	15	10	6.5	5	5	5	5	5

Asbestos - done only at Randolph for 35 per sample.

RCRA Characteristics

	Emergency Response						7 Work Days						30 Calendar Days					
	GC	Federal Ran	ARDL	GC	State Ran	ARDL	GC	Federal Ran	ARDL	GC	State Ran	ARDL	GC	Federal Ran	ARDL	GC	State Ran	ARDL
Ignitability (Flashpoint)	76	100	30	30	100	30	57	60	24	24	60	24	18	20	9	9	20	9
Reactivity (CN- & S-)	95	200	75	75	200	75	17	120	60	60	120	60	24	40	25	25	40	25
Corrosivity (NACE)	133	500	165	65	500	165	100	300	32	32	300	132	97	60	50	50	60	50
Corrosivity (pH)	15	25	20	20	25	20	11.5	15	16	16	15	16	12.5	5	3	3	5	3
E.P. Toxicity Extraction																		
Water	152	50	50	50	50	50	114	30	37.5	37.5	30	37.5	20	10	16	16	10	16
Soils/Solids	152	200	100	100	200	100	114	180	75	75	180	75	40	45	32	32	45	32
E.P. Tox Metals Analysis																		
Cost/Metal (Ba,Cd,Cr,Pb,Ag)	23	60	40	40	60	40	17	30	30	30	30	30	16	10	8	8	10	8
Cost/Metal (As,Se,Hg)	57	180	60	60	180	60	43	90	45	45	90	45	23.5	30	19.5	19.5	30	19.5
Cost/Metal Others	23	60	20	20	60	20	17	30	15	15	30	15	8	10	15	15	10	15

Organic Parameters Analysis

Emergency Response										7 Work Days						30 Calendar Days						
Federal			State			Federal				State			Federal				State					
GC	Ran	ARDL	GC	Ran	ARDL	GC	Ran	ARDL		GC	Ran	ARDL	GC	Ran	ARDL		GC	Ran	ARDL			
PCB's	430	450	300	300	450	300	300	250		250	300	250	120	130	140		140	130	140			
Pest/PCB's	494	1250	450	450	1250	450	750	350		350	750	350	180	170	140		140	170	140			
Volatiles	665	750	600	600	750	600	500	450		450	450	450	242	140	265		215	140	215			
Semi-Vol.	1280	1500	1200	1200	1500	1200	960	900		900	900	900	480	320	370		420	320	420			
TOC	57	100	45	45	100	45	43	35		35	60	35	23.5	20	9		9	20	9			
TOX/water	133	250	98	98	250	98	100	78		78	150	78	58	50	45		45	50	45			
Fish-Pest/PCB's													285	260	275							

GC* -->Gulf Coast
Ran* -->Randolph & Associates
ARDL* -->ARDL Inc.

**All Numbers in Dollars

***Federal Projects - PA/SI,LUST,RFA,NPL

***State Projects - IR,SRAPL,FOS

FREQUENTLY REQUESTED ANALYSES

Frequently Requested Analyses	Container Description	Number of Bottles Per Sample
VOC in water ¹	40 ml Vial	2 ²
VOC in soil	2 oz glass	2
BN/A in water	80 oz amber glass	2
BN/A soil	32 oz glass	1
Pesticides/PCBs in Water	80 oz amber glass	2
Pesticides/PCBs in soil	32 oz glass	1
Trace metals in water (22 target compounds)	1 l plastic	1
Trace metals in soil (22 target compounds)	32 oz glass	1
Mercury Water	500 ml plastic	1

See the contract Lab price list for additional parameters and analytical costs.

¹There will be one trip blank provided by the bottle center for every 1-10 samples for VOC analysis of water.

²Drinking water analysis requires 5 40 ML vials for each sample.

TARGET COMPOUND LIST

Volatile Target Compounds

Compound	Water CRDL	Soil/Solid CRDL
1. chloromethane	10 ug/l	10 ug/kg
2. bromomethane	10	10
3. vinyl chloride	10	10
4. chloroethane	10	10
5. methylene chloride	5	5
6. acetone	10	10
7. carbon disulfide	5	5
8. 1,1-dichloroethene	5	5
9. 1,1-dichloroethane	5	5
10. 1,2-dichloroethene (total)	5	5
11. 1,2-dichloropropane	5	5
12. chloroform	5	5
13. 1,2-dichloroethane	5	5
14. 2-butanone	10	10
15. 1,1,1-trichloroethane	5	5
16. carbon tetrachloride	5	5
17. vinyl acetate	10	10
18. dichlorobromomethane	5	5
19. c-1,3-dichloropropene	5	5
20. trichloroethene	5	5
21. benzene	5	5
22. chlorodibromomethane	5	5
23. 1,1,2-trichloroethane	5	5
24. t-1,3-dichloropropene	5	5
25. bromoform	5	5
26. 2-hexanone	10	10
27. 4-methyl-2-pentanone	10	10
28. 1,1,2,2-tetrachloroethane	5	5
29. tetrachloroethene	5	5
30. toluene	5	5
31. chlorobenzene	5	5
32. ethylbenzene	5	5
33. styrene	5	5
34. total xylenes	5	5

CRDL - Contract Required Detection Limit

DRINKING WATER SAMPLES -- In the case of drinking water samples, the Lab can be requested to report the instrument detection limit which is lower than the CRDL for VOC analysis. This request must be made at the time of scheduling since more samples will be required by the Lab. (See footnote on previous page).

Base/Neutral Target Compounds

Compound	Water CRDL	Soil/Solid CRDL
1. Hexachloroethane	10 ug/l	330 ug/kg
2. Bis (2-chloroethyl) ether	10	330
3. Benzyl Alcohol	10	330
4. Bis (2-chloroisopropyl) ether	10	330
5. N-nitrosodi-n-propylamine	10	330
6. Nitrobenzene	10	330
7. Hexachlorobutadiene	10	330
8. 2-Methylnaphthalene	10	330
9. 1,2,4-trichlorobenzene	10	330
10. Isophorone	10	330
11. Naphthalene	10	330
12. 4-Chloroaniline	10	330
13. Bis (2-chloroethoxy) methane	10	330
14. Hexachlorocyclopentadiene	10	330
15. 2-chloronaphthalene	10	330
16. 2-Nitroaniline	50	1600
17. Acenaphthylene	10	330
18. 3-Nitroaniline	50	1600
19. Acenaphthene	10	330
20. Dibenzofuran	10	330
21. Dimethylphthalate	10	330
22. 2,6-Dinitrotoluene	10	330
23. Fluorene	10	330
24. 4-Nitroaniline	50	1600
25. 4-Chlorophenyl-phenyl ether	10	330
26. 2,4-Dinitrotoluene	10	330
27. Diethylphthalate	10	330
28. N-Nitrosodiphenylamine	10	330
29. Hexachlorobenzene	10	330
30. Phenanthrene	10	330
31. 4-Bromophenyl-phenyl ether	10	330
32. Anthracene	10	330
33. Dibutylphthalate	10	330
34. Fluoranthene	10	330
35. Pyrene	10	330
36. Butyl benzyl phthalate	10	330
37. Bis (2-ethylhexyl) phthalate	10	330
38. Chrysene	10	330
39. Benzo (a) anthracene	10	330
40. 3,3'-Dichlorobenzidine	20	660
41. Di-n-octyl phthalate	10	330
42. Benzo (b) fluoranthene	10	330
43. Benzo (k) fluoranthene	10	330
44. Benzo (a) pyrene	10	330
45. Indeno (1,2,3-cd) pyrene	10	330
46. Dibenzo (a,h) anthracene	10	330
47. Benzo (g,h,i) perylene	10	330
48. 1,2-Dichlorobenzene	10	330
49. 1,3-Dichlorobenzene	10	330
50. 1,4-Dichlorobenzene	10	330

Acid Target Compounds

Compound	Water CRDL	Soil/Solid CRDL
1. Benzoic Acid	50 ug/l	1600 ug/kg
2. Phenol	10	330
3. 2-chlorophenol	10	330
4. 2-nitrophenol	50	1600
5. 2-methylphenol	10	330
6. 2,4-dimethylphenol	10	330
7. 4-methylphenol	10	330
8. 2,4-dichlorophenol	10	330
9. 2,4,6-trichlorophenol	10	330
10. 2,4,5-trichlorophenol	50	1600
11. 4-chloro-3-methylphenol	10	330
12. 2,4-dinitrophenol	50	1600
13. 2-methyl-4,6-dinitrophenol	50	1600
14. Pentachlorophenol	50	1600
15. 4-nitrophenol	50	1600

Pesticide Target Compounds

Compound	Water CRDL	Soil/Solid CRDL
1. alpha-BHC	.05 ug/l	8.0 ug/kg
2. beta-BHC	.05	8.0
3. delta-BHC	.05	8.0
4. Lindane (gamma-BHC)	.05	8.0
5. Heptachlor	.05	8.0
6. Aldrin	.05	8.0
7. Heptachlor epoxide	.05	8.0
8. Endosulfan I	.05	8.0
9. 4,4'-DDE	.10	16.0
10. Dieldrin	.10	16.0
11. Endrin	.10	16.0
12. 4,4'-DDD	.10	16.0
13. Endosulfan II	.10	16.0
14. 4,4'-DDT	.10	16.0
15. Endrin aldehyde	.10	16.0
16. Endosulfan sulfate	.10	16.0
17. Methoxychlor	.50	80.0
18. alpha-Chlorodane	.5	80.0
19. gama chlorodane	.5	80.0
20. Toxaphene	.50	80.0
21. Arochlor-1016	1.0	160.0
22. Arochlor-1221	.50	80.0
23. Arochlor-1232	.50	80.0
24. Arochlor-1242	.50	80.0
25. Arochlor-1248	.50	80.0
26. Arochlor-1254	1.0	160.0
27. Arochlor-1260	1.0	160.0

Inorganic Target Compounds

Metals Analyses (CRDL)-ug/l*

Aluminum	200
Antimony	60
Arsenic	10
Barium	200
Beryllium	5
Cadmium	5
Calcium	5000
Chromium	10
Cobalt	50
Copper	25
Iron	100
Lead	5
Magnesium	5000
Manganese	15
Mercury	0.2
Nickel	40
Potassium	5000
Selenium	5
Silver	10
Silver	5000
Thallium	10
Vanadium	50
Zinc	20

Other Inorganics

Cyanide
Sulfide
Phenols
Nitrogen-Ammonia
Nitrogen, Total Kjeldahl
Nitrogen-Nitrate
Boron
pH
Sulfate
Chloride

*Any analytical method specified in the Quality Assurance Project Plan (QAPP) may be utilized as long as the documented instrument or method detection limits meet the Contract Required Detection Level requirements. Higher detection levels may only be used in the following circumstance:

If the sample concentration exceeds two times the detection limit of the instrument or method in use, the value may be reported even though the instrument or method detection limit may not equal the CRDL. This is illustrated in the example below:

For lead:

Method in use -- ICP

Instrument Detection Limit (IDL) = 40

Sample Concentration = 85

Contract Required Detection Level (CRDL) = 5

The value of 85 may be reported even though instrument detection limit is greater than required detection level. The instrument or method detection limit must be documented as described in Form IIIX.

These CRDL are the instrument detection limits obtained in pure water that must be met using ICP/Flame AA or Furnace AA. The detection limits for samples may be considerably higher depending on the sample matrix.

IEPA - CLP BOTTLE LIST

Container Code	Container Description	Matrix	Analysis
1	1 l amber glass*	Water	Pesticide, PCBs or BN/A
3	1 l plastic	Water	Metals, Cyanide, General, Nutrients, Radioactivity
5	32 oz glass	Water soil or waste	Oil & Grease, Phenol, BN/A, Pesticides, PCBs, Metals, Mercury, Cyanide, Nutrients, General
8	40 ml vial	Water	VOA
9	80 oz amber glass	Water	Pesticide, PCBs or BN/A
10	500 ml plastic	Water	Mercury
11	1 gal plastic	Water	Pre-filtration (Monitoring well samples are Filtered. Drinking water is not.)
12	2 oz glass	Soil or Waste	VOA

Generally wide mouth bottles are used for soils and small mouth bottles are used for water. The exception is a wide mouth bottle used for phenols, oil and grease in water.

Bottle sizes are designed to provide the analytical laboratory with the required quantity of sample. The bottles should be filled to capacity except under special prearranged circumstances.

An 8 oz. wide mouth glass bottle has been used for several special projects such as soil sampling for PCBs or dioxin or for waste samples. These bottles will soon be added to our regular stock.

*This bottle is used only for projects not requiring the QC control that is built into standard analyses by the contract.

PRESERVATIVE COLOR CODE

<u>Parameter and Sample Type</u>	<u>Container Type(s)</u>	<u>Reagent Name</u>	<u>Color Code</u>
Oil/Grease	5	(50% H ₂ SO ₄)	Brown
Phenols	5	(10% CuSO ₄ , H ₃ PO ₄)	Pink
Cyanide	3, 5	(6 Normal NaOH)	Black
Metals	3, 5	(50% HNO ₃)	Green
Mercury	5, 10	(25% HNO ₃ , 25% K ₂ Cr ₂ O ₇)	Silver
Nutrients	3, 5	(50% H ₂ SO ₄)	Yellow
Prefiltration	11	None	--
General	3, 5	None	
Radioactivity	3, 5	(50% HNO ₃)	Green
Sulfides	3	(2 Normal Zinc acetate)	Purple

The preservative should be poured into the empty container first and then the sample liquid added.

GW MONITORING EQUIPMENT CHECK LIST

Bailers (various sizes and material - PVC, stainless steel, teflon)

pH meter

pH buffer (4,7,&10)

Specific conductance meter

Specific conductance standards (707 & 1413 umhos)

Site map

Keys for wells and gates

Personal protective equipment

DI Water

Paperwork

Coolers

Bottles

Preservatives

Ice

Tools

Slope indicator

Tape measure

Fiber Drum

Plastic bags

Watch

Funnel

Bailer Retriever

Calibrated 5 gal. bucket

Filtering equipment

Disposable powder-free gloves

Paper towels

Calculator

Ink pens and markers

Field meter log book

Site specific GW monitoring plan

Water level indicator

HNU

Knife

Bailer Cord

USING THE DATA

Laboratory results are always mailed to the CLC to assure continuity of handling. A typical data package is several inches thick with much of the bulk being strip charts and other Quality Control data which is undecipherable to most people.

The CLC will have 3 copies made of the results portion of the data and distribute them to the division file, region file and the project manager. The original data package is then sent to Ron Turpin's Office where approximately 5% receive a QC review. The original data is then sent to the DLPC file room where it is placed in boxes and ultimately sent to the warehouse. Original Lab data can be retrieved if a case goes to court.

Asbestos results are reported as a percentage. All other samples will be reported in metrics, for example;

Water

mg/l PPM milligram/liter

ug/l PPB microgram/liter

ng/l PPT nanogram/liter

SOIL/SEDIMENT

ug/g PPM microgram/gram

ug/kg PPB microgram/kilogram

mg/kg PPM milligram/kilogram

The results for each sample will be marked with one or more letters which are qualifiers to help the user interpret the data. Standard qualifiers are included in the contract and are the same for all the labs, however, since each lab also uses a few unique qualifiers a list is included from each laboratory.

SD:ba/sp/1830g/1-29

INORGANIC QUALIFIERS

- A - Result is on an "as is basis" (wet weight).
- B - Reported value is less than the CRDL but greater than the IDL.
- d - Result is on a dry weight basis.
- E - Severe matrix interference.
- M - Duplicate injection precision not met.
- N - Spike recovery not within control limit.
- S - Indicates value determined by Method of Standard Addition.
- U - Indicates compound was analyzed for but not detected.
- W - Post analytical spike is out of control limits.
- X - Result by calculation.
- * - Duplicate not within control limits.
- + - Correlation coefficient for MSA < 0.995.

ORGANIC QUALIFIERS

- U - Indicates that the compound was analyzed for but not detected.
- J - Indicates an estimated value for either a TIC or an analyte that meets the identification criteria but the result is less than the specified detection limit.
- B - Indicates the compound was found in the blank and the sample.
- E - Concentrations exceed calibration range of the instrument.
- BS - Indicates matrix analyses were conducted on reagent grade water.
- BSD - Indicates blank spike duplicate.
- BDL - Below Detection Limit.
- MS - Indicates matrix spike.
- MSD - Indicates matrix spike duplicate.
- D - Indicates that surrogate/matrix spike recoveries were not obtained because the extract had to be diluted for analysis.
- DL - Indicates a secondary dilution.
- NA - Not applicable.
- DF - Dilution factor.

RECEIVED

MAY - 8 1989

EPA-GCLFC

Revised 01/26/89



Randolph & Associates, Inc.

8901 NORTH INDUSTRIAL ROAD, PEORIA, ILLINOIS 61615-1589
TELEPHONE 309-692-4422

INORGANIC ANALYSIS DATA SHEET QUALIFIERS

The various forms include columns for data qualifiers. The inorganic column headings, with allowed qualifiers or designations, are as follows:

Column C (Concentration) Qualifiers

- U - This flag indicates the parameter was analyzed for, but not detected.
- B - This flag indicates the parameter concentration was greater than the Instrument Detection Limit (IDL) but less than the CRQL.

Column Q (Quality Control) Qualifiers

- E - This flag indicates the reported value is estimated, due to the presence of an interference. The interference is observed and reported on the ICP Serial Dilution Form VIII, with the criteria for flagging the data as within $\pm 10\%$ of the original for the diluted analysis. An explanatory note is included in the case narrative, to give additional information.
- M - This flag indicates the duplicate injection precision was not met.
- * - This flag indicates the duplicate analysis is not within the 20% RPD control limits.
- NC - This flag indicates at least one of the duplicate sample results is below the CRQL, and the %RPD is not calculated on Form VI.
- N - This flag indicates the spike sample recovery is not within the 75-125% recovery control limits.
- S - This flag indicates the reported value was determined by the Method of Standard Additions (MSA). MSA shall be used for the analysis of all EPTox extracts.
- + - This flag indicates the correlation coefficient for MSA is less than 0.995.
- W - This flag indicates the post-digestion spike for furnace AA analysis is outside the control limits (85-115%), while the sample absorbance is less than 50% of spike absorbance.

Note that qualifiers "S", "W", and "+" are mutually exclusive. No combination of these qualifiers may appear in the same column for an analyte.

Inorganic Qualifiers

Page two

May 8, 1989

Additional qualifiers may be used, but they must be clearly defined in the case narrative.

Column M (Method) Designations

P	ICP
A	Flame AA
F	Furnace AA
CV	Manual Cold Vapor AA
AV	Automated Cold Vapor AA
AS	Semi-Automated Spectrophotometric
C	Manual Spectrophotometric
T	Titrimetric
NR	Analysis Not Required

ORGANIC ANALYSIS DATA SHEET QUALIFIERS

The various forms include columns for results qualifiers. Forms 1A - 1F contain a column identified at the top as Q, with the following defined qualifiers:

- U - This flag indicates the compound was analyzed for but not detected. The quantitation limit is corrected for dilution and percent moisture.
- J - This flag indicates an estimated value, and is used for one of two reasons.
 - 1) The mass spectral data and/or chromatographic data indicates the presence of a target compound which meets the normal identification criteria (spectrum and/or retention time), but the concentration is below the CRQL.
 - 2) This flag is used when estimating the concentration for TICs, assuming a response factor of one, i.e. all TIC concentrations are flagged with a J.
- B - This flag indicates this compound was found in the procedural blank prepared and analyzed with the sample, whether as a target compound, or as a TIC. Target compounds allowed, to a maximum of 5X CRQL, in the blank include the common laboratory solvents Methylene Chloride, Acetone, 2-Butanone, and Toluene, as well as common phthalates. Other target compounds in the blank above the CRQL require the sample to be re-extracted, with a new blank, after identifying possible sources of contamination.
- E - This flag identifies compounds whose concentrations exceed the calibration range of the instrument for the analysis. The analytical fraction containing the compound which exceeds the calibration range must be diluted and re-analyzed, with submission of a separate Form 1. The lab sample number and EPA sample number shall have the "DL" suffix appended to them.

- D - This flag identifies all compounds identified in a re-analysis after dilution. It is possible/probable that not all compounds identified in the primary analysis will be observed in the dilution re-analysis.
- C - This flag identifies pesticide results where the identification has been confirmed by GC/MS. Single component pesticides greater than 10 ng/ul in the final extract will be confirmed by GC/MS.

Additional qualifiers may be defined for a particular set of circumstances. The qualifier will be adequately defined in the case narrative with the sample(s).

Forms 2A - 2F and 3A - 3F include a column headed by "*" which may be flagged with a "*" to indicate the recovery of a surrogate or spike compound was outside the contract required QC limits. Re-extraction and/or re-analysis may or may not be required, depending on the nature of the failure, or its verification.

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
CONTRACT LABORATORY SERVICE
INORGANIC ANALYSES DATA PACKAGE

Footnotes:

NK - Not Required.

Chemical Analysis Form:

- Value - If the result is a value greater than or equal to the instrument detection limit but less than the contract required detection limit, report the value in brackets (i.e., [10]). Indicate the analytical method used with P (for ICP/Flame AA), F (for furnace), CV (for Cold Vapor) and BH (for Borohydride).
- U - Indicates element was analyzed for but not detected. Report the detection limit value (e.g., 10U).
- E - Indicates a value estimated or not reported due to the presence of interference.
- S - Indicates value determined by Method of Standard Addition.
- N - Indicates spike sample recovery is not within control limits.
- * - Indicates duplicate analysis is not within control limits.
- + - Indicates the correlation coefficient for method of standard addition is less than 0.995.

ORGANIC DATA REPORTING QUALIFIERS

- U - Indicates compound was analyzed for but not detected. The sample quantitation limit must be corrected for dilution and for percent moisture.
- J - Indicates an estimated value. This flag is used either when estimating a concentration for TICs where a 1:1 response is assumed, or when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the CRDL.
- C - This flag applies to pesticide results where the identification has been confirmed by GC/MS. Single component pesticides greater than or equal to 10 ng/ul in the final extract shall be confirmed by GC/MS.
- B - This flag is used when the analyte is found in the blank as well as the sample. This flag must be used for a TIC as well as for a positively identified TCL compound.

ORGANIC DATA REPORTING QUALIFIERS (Continued)

- D - This flag identifies all compounds identified in an analysis at a secondary dilution factor. If a sample or extract is re-analyzed at a higher dilution factor, as in the "E" flag above, the "DL" suffix is appended to the sample numbers (both lab and EPA) on the Form 1 for the diluted sample, and all concentration values reported on that Form 1 are flagged with the "D" flag.
- E - This flag identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis. If one or more compounds have a response greater than full scale, the sample or extract must be diluted and re-analyzed. All such compounds with a response greater than full scale should have the concentration flagged with an "E" on the Form 1 for the original analysis. If the dilution of the extract causes any compounds identified in the first analysis to be below the calibration range in the second analysis, then the results of both analyses shall be reported on separate Forms 1. The Form 1 for the diluted sample shall have the "DL" suffix appended to the lab sample number and the EPA sample number.